EPCRA 313 REPORTING

Purpose

This Meteorology and Air Quality Group (MAQ) procedure describes the steps taken by MAQ for the Laboratory to comply with the reporting requirement of Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA).

Scope

This procedure applies to reporting of any toxic chemical used at the Laboratory over specified thresholds in accordance with Section 313 of EPCRA.

In this procedure

This procedure addresses the following major topics:

Signatures

Prepared by: Margie Stockton, MAQ	Date: 4/19/2005
Approved by: Terry Morgan, QA Officer	Date: 4/19/2005
Work authorized by: Jean Dewart, MAQ Group Leader	Date: 4/20/2005

04/28/05

General information about this procedure

Attachments

There are no attachments for this procedure.

History of revision

This table lists the revision history and effective dates of this procedure.

Revision	Date	Description Of Changes
0	8/30/99	New document.
1	1/4/01	Updated to reflect changes in the EPCRA requirements.
2	4/15/02	Minor grammatical changes to clarify meaning, updated Form R attachment, updated regulatory drivers section to reflect new lead threshold, and more detail added on estimating releases.
3	4/22/05	Deleted attachment, added more detail on calculating water releases and waste disposal, and added chapter *Other Data Needed for Form R.*

Who requires training to this procedure?

The following personnel require training before implementing this procedure:

- Individuals assigned to track and report EPCRA 313 chemicals procured and used at LANL.

Training method

The training method for this procedure is "**self-study**" (reading) and is documented in accordance with the procedure for training (MAQ-024)

Definitions specific to this procedure

Process: The preparation of a listed toxic chemical, after its manufacture, for distribution in commerce.

Manufacture: To produce, prepare, compound, or import a listed toxic chemical.

Otherwise use: Any activity involving a listed toxic chemical at a facility that does not fall under the definitions of "manufacture" or "process."

Persistent Bioaccumulative Toxics: A subset of chemicals defined by the EPA that have much lower chemical-specific thresholds for reporting under EPCRA Section 313. These lower thresholds became effective for reporting year 2000.

General information, continued

References

The following documents are referenced in this procedure:

- MAQ-024, “Personnel Training”
- MAQ-309, “Chemical Procurement Tracking”
- MAQ-317, “Generating Non-Rad Emissions Reports”

Note

Actions specified within this procedure, unless preceded with “should” or “may,” are to be considered mandatory guidance (i.e., “shall”).

Reporting requirements and history

Regulatory driver

The Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), Title III, Section 313, also known as the Superfund Amendment and Reauthorization Act (SARA), requires owners and operators of manufacturing, processing, and production facilities to annually report their toxic chemical releases, according to a chemical list, to all environmental mediums (air, water, land, and off-site transfers). Executive Order 12856, dated August 3, 1993 required all federal facilities, regardless of SIC code, to report their toxic chemical use and resulting releases under EPCRA 313. Executive Order 13148, dated April 26, 2000 re-emphasized the requirement for federal facilities to comply with EPCRA 313 reporting requirements and set toxic chemical release reduction goals for federal facilities. On October 29, 1999, the EPA promulgated a final rule lowering the thresholds for reporting under EPCRA Section 313 for certain persistent bioaccumulative toxic chemicals (64 FR 58666). On January 17, 2001, the EPA promulgated a final rule lowering the threshold for reporting lead and lead compounds under EPCRA Section 313.

What is the Form R?

The annual report required by regulation is a form produced by the EPA entitled "Form R." A completed Form R must be submitted for each EPCRA Section 313 toxic chemical manufactured, processed, or otherwise used in excess of EPCRA Section 313 thresholds. The Form R contains sections for facility identification, chemical identification, and release estimates for all environmental media.

Each year, the EPA publishes a new Form R and instruction booklet. The chapter *Forms and data requests* of this procedure contains additional information and ordering instructions.

LANL reporting history

LANL has been voluntarily filing Form R reports since 1987. The Form R report is submitted to the EPA and the State Emergency Response Coordinator. LANL also submits a written report and Form R to the Department of Energy (DOE). The written report gives a more detailed account of how LANL determined which chemicals need to be reported, how each reportable chemical is used, how much of each chemical is used, and documents the release calculations for each reportable chemical. This report is made available for public distribution either via hard-copy or the MAQ website.

Reporting deadlines

The Form R for any calendar year must be submitted on or before July 1 of the following year. Data collection and analysis should begin in January in order to meet this deadline.

Parameters used within the procedure

Section 313 chemicals

The EPCRA Section 313 chemical list includes over 600 chemicals and may be updated annually by the EPA. The list is posted on EPA's web site (www.epa.gov/tri) and in the EPA's annual Form R instruction booklet.

The EPA guidance, such as the TRI website, should be consulted prior to starting each reporting year analysis to determine if any chemicals have been added, deleted, or if any chemical thresholds have changed.

Procurement data

The data initially evaluated to determine which chemicals may be reportable under EPCRA Section 313 are gathered from LANL's various chemical procurement systems as described in procedure MAQ-309. An initial assumption in the threshold determination is that procurement quantities for the calendar year are equivalent to usage quantities.

Section 313 thresholds

Any chemical identified through procurement records that has been purchased in volumes greater than 75% of threshold (rule of thumb), or in excess of 10,000 lb is further analyzed, as specified by this procedure. The 10,000 lb is chosen as a starting point because it is the most conservative threshold level of the three activity determinations defined (see definitions).

Process Threshold: 25,000 lb

Manufacture Threshold: 25,000 lb

Otherwise Use Threshold: 10,000 lb

Persistent bioaccumulative toxics thresholds

Effective reporting year 2000, a subset of approximately 20 chemicals identified as persistent bioaccumulative toxics must be evaluated against much lower thresholds. The thresholds for reporting are chemical-specific, and range from 100 lb to 10 lb (0.1 gram for dioxins). For this group of chemicals, the procurement data must be evaluated against each chemical-specific threshold. Persistent bioaccumulative toxics (PBTs) used at LANL include mercury (reporting threshold 10 lb) and lead (reporting threshold 100 lb).

Parameters used within the procedure, continued

Exemptions

Toxic chemicals used in the following activities are exempt from EPCRA Section 313 reporting:

- Laboratory activities such as soil dissolution, ionization column recharge, and sample preservation
- Routine janitorial or facility grounds maintenance
- Employees' personal use
- Motor vehicle maintenance and operations
- Structural component of the facility

Additionally, EPCRA Section 313 chemicals contained in articles are exempt from threshold determinations and release calculations. Articles are defined as items that are formed to a specific shape or design during manufacturing and have end use functions dependent on its shape or design during use. To maintain the article exemption, the articles must not release more than 0.5 lb of any EPCRA Section 313 chemical during their normal use. Examples of articles include batteries, intact light bulbs, and lead pipes.

Finally, EPCRA Section 313 includes a *de minimis* exemption for minimal concentrations of chemicals contained in mixtures or other trade name products. The *de minimis* concentrations are set by EPA at either 1% for non-carcinogens, or 0.1% for carcinogens or suspected carcinogens. The *de minimis* exemption cannot be used for chemicals that are persistent bioaccumulative toxics.

Refining procurement data

Determining actual usage

For any chemical that was procured in excess of 75% of the initial 10,000-lb threshold, chemical users or purchasers must be contacted to obtain additional information. A site operator or manager can provide a complete description of the processes in which the chemical is used and how much of the chemical was used during the reporting period.

After gathering information on how each large volume chemical is used, review the activity exemptions that may be applicable according to the instruction booklet mentioned earlier. Using the information provided, determine the appropriate activity (process, manufacture, and otherwise use) for the various procurement amounts. If the chemical still exceeds any specific threshold, obtain more accurate information on actual usage quantities from the site operator or manager.

Chemical use not captured through procurement records

The procurement data provide the baseline data on the amount of each EPCRA Section 313 chemical used. However, there are avenues for EPCRA Section 313 chemicals to be manufactured, processed, or otherwise used at LANL that are not captured through procurement records. Examples of these activities include:

- Lead bullets shot at the firing range
- HE burned and HE expended at DX and ESA
- Activities involving melting, reforming, and decontaminating lead shielding
- Asphalt production
- Addition of mercury to the LANSCE shutters
- Nitric acid use at TA-55
- Metal oxides and other toxic chemicals formed as by-products of fuel combustion.

Operating parameters and material throughput for these types of activities must be obtained from the division or group personnel. Information on the amount of EPCRA Section 313 chemicals manufactured, processed, or otherwise used from these activities can be calculated based on the information provided. Review the previous year's EPCRA Section 313 files to determine which groups to contact. Additionally, review the PR-ID database to determine any new activities that use EPCRA Section 313 chemicals that might not be captured in the procurement systems.

Refining procurement data, continued

Finalize threshold determinations

After collecting all usage data from both the procurement systems and the various activities described above, estimate an actual usage number for each chemical. Compare this actual usage number to the thresholds again to see if any have been exceeded. If they are not exceeded, the chemical does not need to be reported. If the thresholds have been exceeded, follow the steps in the chapter *Estimating Releases* to produce multi-media release estimates for each reportable chemical.

Refining threshold evaluations for PBTs

For the subset of persistent bioaccumulative toxics (PBTs), a similar analysis is done to refine the threshold evaluations. For any PBT that procurement records indicate may be near its applicable threshold (rule of thumb, 75% of the threshold), the additional analyses described above must be done. The activity exemptions described in this procedure can be applied to the PBTs. Additionally, the activity (manufactured, processed, and otherwise used) should be determined for the PBTs. The only difference is that for PBTs, the thresholds for manufactured, processed, or otherwise used are chemical-specific. Finally, for dioxin, only the manufacturing or creation of dioxin needs to be evaluated for EPCRA Section 313 applicability. Dioxins may be formed through the combustion of chlorine-containing materials.

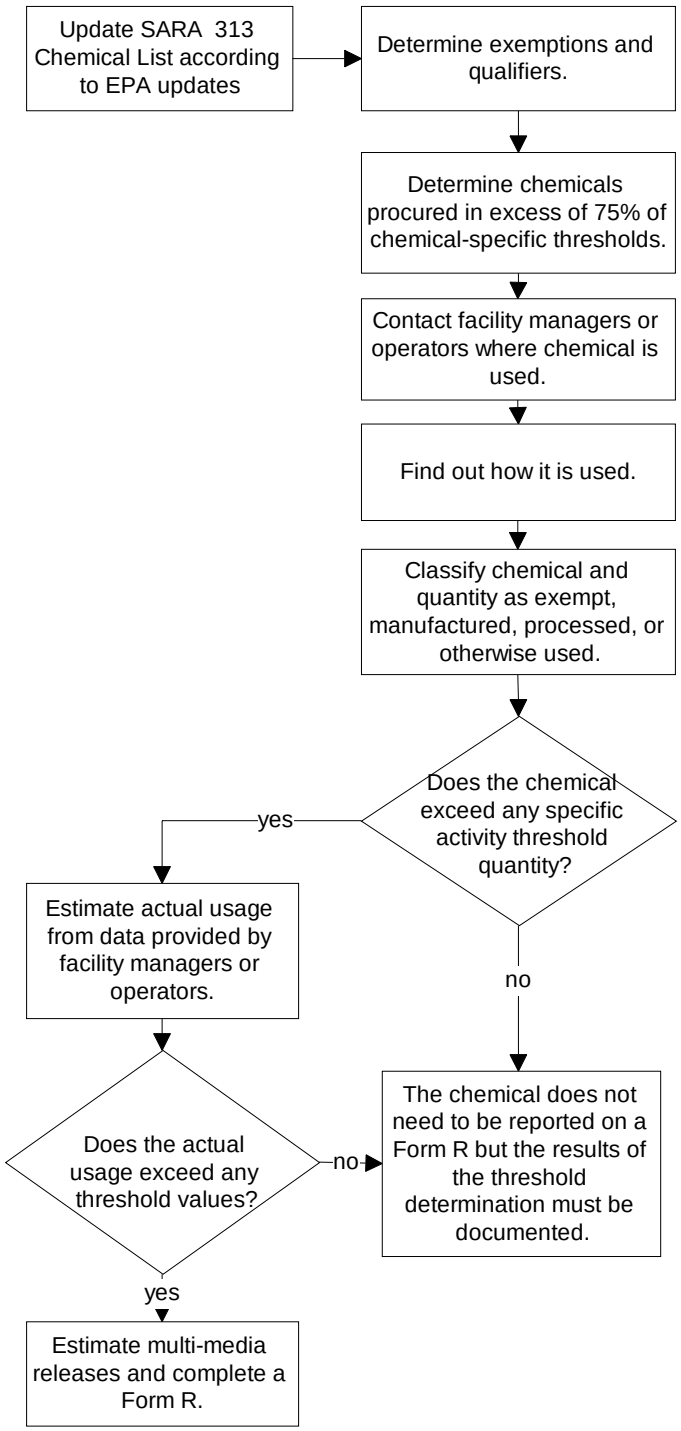
Example: chlorine

Chlorine procurements at the Laboratory in 1996 exceeded the 10,000 lb initial threshold. The bulk of the chlorine was used for water treatment. Site managers were contacted to find out how each treatment facility uses chlorine. After talking to the managers, it was determined that the "process" threshold could be applied to some of the chlorine used to treat drinking water. The process threshold is applied to a portion of the chlorine used in drinking water that is sold back to the community. The "otherwise use" threshold was applied to all other uses of chlorine for water treatment. The site managers also provided actual usage numbers. The usage numbers were compared to two different thresholds: "process" and "otherwise used." From this comparison, it was determined that chlorine did not need to be reported because the actual usage numbers were below the applicable thresholds.

Refining procurement data, continued

Steps to refine data

The flow chart below shows the steps necessary to determine if Form R and release estimates are required.



Estimating releases

Estimate environmental releases

For each chemical that exceeds a threshold, a Form R must be completed. The Form R includes information on releases to the environment via air emissions, water discharges, and waste disposal. The process for obtaining and processing these data is described in the blocks below.

Estimate air emissions

Air emissions must be reported separately for point sources and fugitive sources. Refer to MAQ-317, "Generating Non-Rad Emissions Reports" for detailed methodology for calculating air emissions.

Calculate and sum all sources of air emissions for each reportable chemical and include these on the Form R. Emissions may be calculated using source test data, published emission factors such as EPA AP-42, mass balance, or other engineering calculations.

Estimate permitted outfall discharges

Review the previous year's EPCRA documentation for the methodology for quantifying water discharges.

- Obtain analytical sample results for reportable chemicals and annual flow rates for each outfall from the Water Quality and Hydrology Group (WQH).
- Obtain the volume of wastewater discharges into each receiving canyon from WQH.
- Calculate average concentrations for the analytical sample results for each outfall.
- Multiply the average concentration by the annual flow rate for each outfall and convert to pounds.

Estimating releases, continued

Estimate stormwater discharges

Review the previous year's EPCRA documentation for the methodology for quantifying water discharges.

- Obtain analytical sample results for reportable chemicals for all storm water monitoring stations from the LANL Water Quality database at http://wqdbworld.lanl.gov.
- Obtain total annual storm water flow for each storm water monitoring station from WQH (published annually in the report "Surface Water Data at LANL, 200x Water Year").
- Subtract out municipal wastewater treatment plant flow from lower Pueblo Canyon stations. Obtain wastewater treatment flow rate from Los Alamos County Public Works Department.
- Subtract out background levels of reportable chemicals in storm water upstream of LANL property.
- Calculate the average concentration for each sampling station, multiply by the annual flow rate and convert to pounds.
- Sum the calculated mass from all stations within the same canyon.
- Report the total mass discharged to each canyon on the Form R.

Estimate waste disposal

Obtain chemical-specific waste disposal records from the Facility Waste Management Group (FM-WFM) for each reportable chemical. The data are provided for all disposal records containing the chemical requested in the waste profile description.

- Evaluate these data to take out laboratory waste, waste articles, and any other exempt waste.
- Report on the Form R only the amount of the reportable chemical in the waste. To do this, for each waste record multiply the total weight of the waste stream by the concentration or percent of the reportable chemical. The composition of the waste is often reported as percent ranges on the waste profile, and professional judgment must be used to determine specific concentrations of reportable chemicals for each waste stream. Typically the mid-point of the range is used.
- Separate the waste totals into separate totals for each location where the waste is shipped and report on separate line items in Section 6 of the Form R. For each location where LANL waste is sent, include on the Form R information on the address, EPA ID Number, and contact information. Also report the type of waste treatment or disposal by the facility. This often requires contacting each waste disposal facility to obtain this information.

Other Data Needed for Form R

Maximum On-site

For each reportable chemical the maximum amount stored on-site during the calendar year must be reported on the Form R as an order-of-magnitude range. Contact operating groups where the chemical is used to help determine this.

On-site waste treatment

Section 7 of the Form R requires information about on-site waste treatment for each reportable chemical. This may include air emission controls, wastewater treatment, or any other waste treatment conducted on site at LANL.

- Contact the Rad Liquid Waste Treatment Facility (RLWTF) to obtain chemical-specific data for the wastewater treated and discharged there. The RLWTF has detailed records and analytical data on all incoming wastewater streams, and the effluent leaving the facility.
- Using the influent and effluent analytical data, calculate treatment efficiencies for individual chemicals.
- Depending on the chemical being reported, other waste treatment may need to be included.

Production/ activity ratio

Section 8 of the Form R requires information on a production or activity ratio for this reporting year compared to the previous year.

- Examples: for lead, the activity ratio has been reported as the amount of ammunition used at the firing range for the current reporting year divided by the amount of ammunition used the previous year. For mercury at LANSCE, the activity ratio has been reported as the total time the beam operated during the current reporting year divided by the total time the beam operated the previous year.
- For each reportable chemical, evaluate the operation that is associated with the largest releases of the chemical and use to develop an activity ratio.

Forms and data requests

Obtaining the EPA Form R

The Form R is produced by the EPA should be downloaded from the EPA's web site (www.epa.gov/tri). Specific instructions about downloading are given on the web site.

Questions on completing the form

The EPA maintains a hotline where any questions about the Form R can be answered and the instructions for filling out the forms may be requested.

Other information sources:

- Emergency Planning, Community Right-to-Know Act (EPCRA) Hotline: (800) 535-0202
- EPA's TRI Home page: http://www.epa.gov/tri
- EPA's Automated Form R website: http://www.epa.gov/tri/report.htm

Submitting the Form R

- Enter all required data on the Form Rs electronically using the EPA-provided TRI software.
- Create duplicate Form Rs – one version signed by DOE, and one version signed by UC.
- Print out the completed Form Rs and obtain peer review, legal review, and classification review.
- Print out the certification statements from the TRI software and obtain signatures from the responsible individual:
    - For DOE the DOE/LASSO, Program Manager for Environmental and/or Facility Operations
    - For UC, the Division Director for ENV Division
- Mail the signed certifications and disks with electronic copies of the Form Rs to the EPA.
- Send a copy of the disks and signed certification to the New Mexico Emergency Response Commission.
- Send a copy of the disk and signed certification to DOE/HQ with the written report for submission.

Data requests

Additional data may be requested by other DOE and LANL organizations.

Records resulting from this procedure

Records

The following records generated as a result of this procedure are to be submitted as records to the records coordinator:

- Completed Form Rs and reports
- Signed Certification Statements
- Procurement records showing total quantity of each EPCRA Section 313 chemical procured
- Documentation of threshold determinations for individual high volume chemicals
- Calculations for estimating releases for reportable chemicals
- Documentation on maximum on-site, waste treatment methods, recycling activities, production/activity ratios for reportable chemicals

Click here to record “self-study” training to this procedure.